

## DESCRIPTION OF TABLES AND CHARTS.

Table I gives the data ordinarily needed for climatological studies for about 158 Weather Bureau stations making simultaneous observations at 8 a. m. and 8 p. m., daily, 75th Meridian Time, and for about 41 others making only one observation. The altitudes of the instruments above ground are also given.

Table II gives a record of precipitation, the intensity of which at some period of the storm's continuance equaled or exceeded the following rates:

Duration (minutes).....	5	10	15	20	25	30	35	40	45	50	60
Rates per hour (in $\frac{1}{16}$ in.) .....	3.00	1.80	1.40	1.20	1.08	1.00	0.94	0.90	0.87	0.84	0.80

It is impracticable to make this table sufficiently wide to accommodate on one line the record of accumulated falls that continue at an excessive rate for several hours. In this case the record is broken at the end of each 50 minutes, the accumulated amounts being recorded on successive lines until the successive rate ends.

In cases where no storm of sufficient intensity to entitle it to a place in the full table has occurred the greatest precipitation of any single storm has been given, also the greatest hourly fall during that storm.

The tipping-bucket mechanism is *dismounted* and removed when there is danger of snow or water freezing in the same. Table II records this condition by entering an asterisk (\*).

Table III gives, for about 30 stations of the Canadian Meteorological Service, the means of pressure and temperature, total precipitation and depth of snowfall, and the respective departures from normal values except in the case of snowfall.

Chart I.—Hydrographs for several of the principal rivers of the United States.

Chart II.—Tracks of centers of high areas; and

Chart III.—Tracks of centers of low areas. The roman numerals show the chronological order of the centers. The figures within the circles show the days of the month; the letters *a* and *p* indicate, respectively, the observations at 8 a. m. and 8 p. m., 75th Meridian Time. Within each circle is also given (Chart II) the last three figures of the highest barometric reading or (Chart III) the lowest reading reported at or near the center at that time, and in both cases as reduced to sea level and standard gravity.

Chart IV.—Temperature departures. This chart presents the departures of the monthly mean temperatures from the monthly normals. The normals used in computing the departures were computed for a period of 33 years (1873 to 1905) and are published in Weather Bureau Bulletin "R," Washington, 1908. Stations whose records were too short to justify the preparation of normals in 1908 have been provided with normals as adequate records became available, and all have been reduced to the 33-year interval 1873–1905. The shaded portions of the chart indicate areas of positive departures and unshaded portions indicate areas of negative departures. Generalized lines connect places having approximately equal departures of like sign. This chart of monthly

temperature departures in the United States was first published in the MONTHLY WEATHER REVIEW for July, 1909.

Chart V.—Total precipitation. The scale of shades showing the depth is given on the chart. Where the monthly amounts are too small to justify shading and over sections of the country where stations are too widely separated or the topography is too diversified to warrant reasonable accuracy in shading, the actual depths are given for a limited number of representative stations. Amounts less than 0.005 inch are indicated by the letter T, and no precipitation by 0.

Chart VI.—Percentage of clear sky between sunrise and sunset. The average cloudiness at each Weather Bureau station is determined by numerous personal observations between sunrise and sunset. The difference between the observed cloudiness and 100 is assumed to represent the percentage of clear sky, and the values thus obtained are the basis of this chart. The chart does not relate to the nighttime.

Chart VII.—Isobars and isotherms at sea level and prevailing wind directions. The pressures have been reduced to sea level and standard gravity by the method described by Prof. Frank H. Bigelow on pages 13–16 of the REVIEW for January, 1902. The pressures have also been reduced to the mean of the 24 hours by the application of a suitable correction to the mean of the 8 a. m. and 8 p. m. readings at stations taking two observations daily, and to the 8 a. m. or the 8 p. m. observation, respectively, at stations taking but a single observation. The diurnal corrections so applied will be found in the Annual Report of the Chief of the Weather Bureau, 1900–1901, volume 2, Table 27, pages 140–164.

The isotherms on the sea-level plane have been constructed by means of the data summarized in chapter 8 of volume 2 of the annual report just mentioned. The correction,  $t_0 - t$  or temperature on the sea-level plane minus the station temperature as given by Table 48 of that report, is added to the observed surface temperature to obtain the adopted sea-level temperature.

The prevailing wind directions are determined from hourly observations at the great majority of the stations; a few stations having no self-recording wind-direction apparatus determine the prevailing direction from the daily or twice-daily observations only.

Chart VIII.—Total snowfall. This is based on the reports from regular and cooperative observers and shows the depth in inches and tenths of the snowfall during the month. In general, the depth is shown by lines inclosing areas of equal snowfall, but in special cases figures are also given. Chart VIII is published only when the general snow cover is sufficiently extensive to justify its preparation.

Chart IX.—Average values of pressure, temperature, and prevailing wind directions, and storm tracks over the North Atlantic Ocean, for the corresponding month of last year.

[Charts XLIV-93 to XLIV-112, accompanying Henry's report on July floods, p. 466.]

TABLE I.—Climatological data for Weather Bureau Stations, August, 1916.

Districts and stations.	Elevation of instrument.		Pressure.		Temperature of the air.								Precipitation.		Wind.														
	Barometer at sea level.	Thermometer above ground.	In.	In.	Mean sea level, reduced to mean of 24 hours.	Departure from normal.	Max.	Min.	Mean maximum.	Mean minimum.	Max.	Min.	Total.	Departure from normal.	Miles.	Clear days.	Cloudy days.	Average cloudiness.											
			Ft.	Ft.	In.	In.	°F.	°F.	°F.	°F.	%	81	In.	In.	81	81	81	81											
New England.																													
Eastport.	76	67	85	29.87	29.95	-0.0	60.1	+ 0.5	80.21	69.47	14	52	28	56	54	84	1.82	- 1.4	9	5,6,9	s.	23	nw.	14	12	9	10	5.1	
Green ille.	1,070	6	6	29.87	29.95	-0.0	65.1	+ 0.4	91.20	77.40	20	54	36	76	76	76	2.95	- 1.4	12	12	12	12	4.4						
Portland, Me.	103	8	11	29.86	29.98	-0.0	66.4	+ 0.4	92.84	74.49	29	58	38	61	58	76	2.14	- 1.4	10	6,15	s.	25	sw.	23	16	8	4	4.1	
Concord.	288	70	79	29.86	29.95	-0.0	64.4	+ 2.1	94.21	81.44	29	57	36	76	76	76	3.45	- 0.3	8	3,059	s.	21	w.	14	18	9	4	3.4	
Burlington.	404	11	48	29.86	29.95	-0.0	69.1	+ 3.0	90.90	80.47	29	59	34	76	76	76	1.06	- 3.0	8	7,247	s.	33	n.w.	13	14	10	11	4.5	
Northfield.	876	12	60	29.06	29.95	+ 0.0	65.1	+ 2.3	92.2	78.40	29	55	38	60	58	82	1.94	- 2.0	12	3,994	s.	28	sw.	26	11	10	11	4.9	
Boston.	1,5	115	188	29.85	29.95	-0.0	71.8	+ 2.9	95.80	51	29	61	25	65	61	77	2.19	- 1.8	9	6,333	sw.	26	w.	14	18	7	6	3.9	
Nantucket.	12	14	90	29.97	29.98	-0.0	67.3	+ 0.7	80.80	73.13	16	61	62	90	1.05	- 2.0	9	9,973	sw.	36	ne.	11	16	11	4	4.1			
Bloc't Island.	26	11	46	29.96	29.99	-0.0	64.4	+ 0.1	81.2	71.55	29	63	17	65	64	89	0.57	- 2.9	9	9,617	sw.	36	ne.	10	12	9	10	4.9	
Narragansett Pier.	9																						21	4	6				
Providence.	160	215	261	29.81	29.98	-0.0	70.8	+ 0.2	91.80	59	29	61	34	65	62	78	1.50	- 3.3	8	7,275	sw.	46	nw.	8	12	13	6	4.4	
Hartford.	159	122	140	29.81	29.9	-0.0	72.0	+ 3.1	91.8	82	48	29	62	33	65	62	78	3.44	- 1.1	7	5,007	s.	32	nw.	23	11	11	6	5.2
New Haven.	106	117	155	29.87	29.98	-0.01	72.0	+ 1.9	94.22	81	50	29	63	27	65	61	73	2.11	- 2.9	9	5,571	s.	36	sw.	8	14	11	6	4.1
Middle Atlantic States.																													
Albany.	97	102	115	29.87	29.97	-0.0	72.4	+ 2.9	98.21	82.48	29	60	30	84	60	71	2.32	- 1.6	10	4,907	s.	24	ne.	1	16	12	3	3.4	
Binghamton.	871	10	69	29.08	29.99	-0.0	70.8	+ 3.3	93.22	83.45	29	59	31	76	76	76	2.80	- 0.4	7	2,501	nw.	21	12	15	4	4.5			
New York.	314	414	454	29.66	29.99	-0.0	70.3	+ 1.4	94.92	81.55	28	66	24	66	62	73	0.59	- 3.9	9	9,245	s.	45	nw.	8	12	13	6	4.7	
Harrisburg.	374	94	104	29.66	30.01	-0.0	74.6	+ 2.5	97.21	84.51	29	65	22	66	62	72	2.34	- 1.9	8	3,731	sw.	27	nw.	8	11	15	5	4.8	
Philadelphia.	117	123	190	29.89	30.01	+ 0.0	76.4	+ 2.6	97.32	85.50	29	68	26	68	61	70	0.94	- 3.7	7	6,090	sw.	30	n.	28	12	16	3	3.9	
Reading.	35	81	98	29.67	30.01	-0.0	74.6	+ 2.5	98.23	85.52	29	64	20	66	63	72	1.56	- 2.9	7	3,777	sw.	27	n.	13	13	11	7	4.6	
Scranton.	805	111	119	29.16	30.01	+ 0.0	71.8	+ 2.5	98.21	81.46	29	60	33	61	60	70	0.67	- 3.6	7	4,030	sw.	31	w.	23	13	16	2	4.1	
Atlantic City.	52	37	48	29.95	30.01	-0.0	73.2	+ 0.6	91.19	79.51	11	67	28	63	65	78	1.21	- 3.1	7	5,316	sw.	18	n.	28	13	10	8	4.8	
Cape May.	18	13	49	30.01	30.03	+ 0.0	73.9	+ 0.5	95.22	82.56	29	66	29	70	68	81	1.03	- 3.2	7	5,155	s.	24	nw.	8	14	14	3	3.7	
Sandy Hook.	22	10	57	29.97	29.99	-0.0	74.6	+ 0.2	92.81	81.60	14	67	21	67	65	80	1.16	- 2.1	8	9,387	s.	47	n.	28	13	13	5	4.4	
Trenton.	190	159	183	29.79	29.99	-0.0	74.0	+ 0.2	97.22	84.53	29	64	13	66	63	78	1.25	- 4.1	6	6,520	s.	37	nw.	23	14	8	9	4.9	
Baltimore.	123	100	113	29.88	30.00	-0.01	76.8	+ 2.1	98.23	85.50	29	69	24	68	64	80	0.83	- 3.4	6	4,292	sw.	26	uw.	27	14	12	5	4.3	
Washington.	112	62	85	29.88	30.01	-0.01	75.2	+ 0.7	97.23	82.55	26	64	14	65	63	78	2.33	- 1.6	8	3,245	sw.	52	nw.	27	14	9	8	4.5	
Lynchburg.	681	153	188	29.29	30.02	-0.01	75.3	+ 0.5	93.03	82.53	15	64	29	68	65	78	2.63	- 1.6	8	3,394	w.	37	n.	21	14	11	6	4.8	
Norfolk.	91	170	205	29.92	30.01	+ 0.01	76.9	+ 0.2	92.03	84.86	27	61	23	69	65	75	2.99	- 3.0	8	7,575	sw.	53	nw.	23	11	13	4	4.8	
Richmond.	144	11	52	29.86	30.01	-0.0	76.1	- 1.4	92.48	86.57	14	66	29	19	67	79	1.55	- 2.9	11	4,328	w.	26	n.	23	14	11	6	4.2	
Wytheville.	2,293	49	55	27.73	30.03	+ 0.0	70.5	0.0	87.6	80	50	25	61	31	65	89	9.53	+ 5.0	16	3,251	w.	23	w.	22	7	15	9	5.5	
South Atlantic States.																													
Asherville.	2,255	70	84	27.76	30.04	+ 0.0	72.6	+ 2.1	87.86	82.56	21	64	30	66	65	87	2.80	- 2.0	15	3,820	nw.	31	e.	1	3	19	9	6.5	
Charlotte.	773	153	161	29.21	30.03	+ 0.01	77.6	+ 1.0	92.11	81.80	29	69	23	70	68	81	2.70	- 2.8	10	5,647	ne.	38	n.	16	8	16	5	5.2	
Hatteras.	11	12	50	30.00	30.01	+ 0.01	77.8	- 0.4	89.12	82.83	29	73	14	73	72	84	4.54	- 1.3	13	9,500	sw.	47	nw.	16	11	11	9	5.2	
Manteo.	12	4	46																					20	5	6			
Raleigh.	376	103	110	29.63	30.01	-0.0	77.8	+ 1.0	94.19	87.63	29	69	26	70	68	79	6.10	- 0.2	12	4,467	se.	36	nw.	23	12	14	5	4.5	
Wilmington.	78	91	91	29.95	30.03	+ 0.0	79.9	+ 1.4	95.10	87.61	29	71	21	73	72	84	2.98	- 4.0	11	6,444	sw.	22	w.	11	11	14	6	4.8	
Charleston.	48	11	92	29.95	30.03	+ 0.0	81.8	+ 1.5	97.19	88.71	30	76	18	75	73	79	3.10	- 3.9	9	6,496	sw.	31	n.	25	16	10	5	4.1	
Columbia, S. C.	351	41	57	29.64	30.02	+ 0.0	80.2	+ 0.7	95.05	80.81	31	71	24	72	69	77	4.57	- 1.9	8	4,288	ne.	26	s.	23	11	12	8	5.2	
Augusta.	180	62	77	29.84	30.00	+ 0.01	81.1	+ 2.2	97.17	90.90	25	71	25	73	73	73	2.29	- 3.8	8	3,277	sw.	44	nw.	13	9	13	5	5.5	
Savannah.	65	150	194	29.90	30.03	+ 0.0	81.5	+ 2.1	97.17	90.90	25	71	25	73	73	73	2.49	- 0.0	11	8,840	sw.	48	s.	28	11	15	5	5.0	
Jacksonville.	43	200	245	30.00	30.01	+ 0.03	81.6	+ 1.5	95.77	90.90	20	74	21	74	72	80	6.76	+ 0.6	15	6,986	s.	52	s.	11	8	17	6	4.8	
Florida Peninsula.																													
Key West.	22	10	64	29.98	30.00	+ 0.02	82.5	- 1.3	91.91	88.88	21	71	31	77	76	78	7.97	+ 1.0	7	12	15	e.	36	e.	3	15	9	7	4.8
Miami.	25	71	79	30.01	30.04	-0.0	80.6	+ 1.4	91.91	88.88	20	76	28	74	74	79	10.10	+ 2.5	12	6,513	e.	40	s.	25	10	9	7	4.7	
Sand Key.	23	39	72	29.95	29.98	-0.00	82.2	- 0.2	89.24	81.71	28	80	15	77	75	79	2.45	- 0.2</td											

TABLE I.—Climatological data for Weather Bureau Stations, August, 1916—Continued.

Districts and stations.	Elevation of instruments.		Pressure.			Temperature of the air.						Precipitation.			Wind.													
	Barometer above sea-level.	Thermometer above ground.	Anerometer above ground.	Station, reduced to mean of 24 hours.	Sea level, reduced to mean of 24 hours.	Departure from normal.	Mean max. + mean min. + 2.	Ale.	Mean maximum.	Minimum.	Ale.	Mean maximum.	Minimum.	Ale.	Total.	Departure from normal.	Days with 0.01 Inch or more.	Total movement.	Precipitation direction.	Miles per hour.	Maximum velocity.	Clear days.	Partly cloudy days.	Cloudy days.	Average cloudiness.	Total snowfall.	Snow on ground at end of month.	
	Ft.	Ft.	Ft.	In.	In.	In.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	%	In.	In.	Miles.										
<i>Ohio Valley and Tennessee</i>							76.5 + 2.1								75	3.23 - 0.2										0-10	4.9	
Chattanooga.....	762	189	213	29.25	30.05 + 0.05	78.4 + 1.9	94	17	87	60	25	70	26	70	68	76	1.41 - 2.3	9	4,235	w.	30	sw.	12	5	17	9	5.9	
Knoxville.....	933	163	100	29.00	31.03 + 0.02	77.0 + 2.3	90	5	86	56	25	68	27	73	68	81	4.24 + 0.2	13	2,706	sw.	24	nw.	13	5	8	18	6.9	
Memphis.....	399	76	97	29.62	30.04 + 0.06	83.8 + 1.6	95	18	89	63	30	73	22	73	70	76	2.98 - 0.2	9	4,850	sw.	34	nw.	13	18	4	9	4.2	
Nashville.....	546	163	191	29.17	30.04 + 0.01	74.1 + 0.6	93	20	88	57	30	69	30	71	68	77	4.27 + 0.8	11	4,063	w.	37	nw.	12	10	14	17	4.9	
Lexington.....	959	193	230	29.91	31.04 + 0.03	74.0 + 1.4	93	19	84	54	29	68	23	70	68	77	2.34 - 1.2	10	5,907	sw.	38	w.	11	16	10	5	4.2	
Louisville.....	825	255	29.47	31.04 + 0.04	74.2 + 1.7	93	7	87	53	29	70	27	70	66	72	3.00 - 0.4	10	5,973	sw.	51	nw.	26	10	13	8	4.9		
Evansville.....	431	139	175	29.56	31.02 + 0.03	79.0 + 2.0	99	19	88	57	29	70	26	72	69	77	4.31 + 1.1	10	5,701	s.	77	sw.	26	13	13	5	4.4	
Indianapolis.....	822	194	231	29.91	31.03 + 0.03	74.6 + 3.0	93	21	80	53	14	67	25	67	63	69	2.47 - 0.9	8	5,722	sw.	46	w.	22	13	14	4	4.0	
Tampa Bay.....	575	96	129	29.40	31.00 + 0.01	77.5 -	99	20	88	53	26	68	26	68	66	72	3.27 - 0.6	6	4,869	sw.	28	nw.	7	19	9	5	5.3	
Cincinnati.....	628	111	51	29.36	31.02 + 0.01	73.3 + 4.7	96	7	86	52	29	66	30	68	64	72	3.57 + 0.2	9	3,631	sw.	28	w.	22	12	13	6	4.5	
Columbus.....	821	173	222	29.17	31.02 + 0.01	73.8 + 2.8	96	21	85	51	14	66	28	67	63	68	3.22 + 0.0	9	5,127	sw.	32	n.	13	19	9	3	3.3	
Dayton.....	839	181	2.6	29.07	31.00 + 0.01	75.4 + 1.8	96	23	86	51	29	67	25	67	63	71	3.07 + 0.1	11	4,875	sw.	42	sw.	22	13	9	4	4.6	
Pittsburgh.....	842	353	410	29.13	31.01 + 0.03	74.2 + 1.7	96	21	84	52	14	65	25	65	61	69	4.73 + 1.6	11	5,634	sw.	21	sw.	7	8	14	5	5.3	
Elkins.....	1,941	411	50	23.05	31.01 + 0.02	70.3 + 1.5	93	5	82	46	14	58	35	63	62	86	3.13 - 0.5	12	1,857	sw.	28	nw.	4	7	8	6	6.0	
Charleston.....	838	77	84	29.39	31.01 + 0.03	75.2 + 1.9	94	21	85	53	29	65	31	64	66	80	2.41 - 1.1	8	2,862	e.	28	nw.	26	10	14	7	5.3	
<i>Lower Lake Region.</i>							72.5 + 2.9								68	2.29 - 0.7											3.7	
Buffalo.....	767	217	280	29.18	29.93 - 0.03	71.6 + 2.8	91	6	78	54	13	63	39	63	59	67	1.46 - 1.5	6	9,375	sw.	40	w.	12	16	9	6	4.0	
Canton.....	415	10	61	21.48	29.95 - 0.03	61.2 + 1.4	93	22	81	45	24	57	49	60	73	1.21 - 1.5	7	5,899	sw.	31	n.	20	18	7	6	3.3		
Osceola.....	315	76	91	23.61	29.97 - 0.02	61.1 + 1.0	97	22	73	51	21	61	29	63	60	73	3.40 + 0.4	9	4,914	sw.	25	w.	30	17	6	8	3.7	
Racine.....	523	97	113	23.41	31.01 + 0.01	71.9 + 3.0	93	22	82	52	31	62	34	63	58	65	2.12 + 0.1	12	6,284	s.	56	sw.	22	13	11	7	4.5	
Superior.....	537	97	113	27.36	30.00 + 0.01	70.8 + 2.2	97	23	80	50	29	61	32	61	60	72	3.12 - 0.6	8	4,857	sw.	43	w.	8	12	15	4	4.1	
Erie.....	711	130	161	29.24	30.03 - 0.01	72.3 + 2.4	92	22	81	50	21	64	24	65	61	69	2.03 - 0.6	6	7,895	s.	19	w.	3	16	10	5	3.9	
Cleveland.....	702	193	201	23.21	30.01 - 0.01	72.4 + 2.0	91	21	80	51	20	65	25	65	61	68	1.30 - 1.8	4	7,561	s.	48	n.	13	14	15	3	3.8	
Sandusky.....	619	62	103	23.31	30.01 - 0.01	71.8 + 3.3	96	7	84	52	29	66	30	65	61	65	2.24 - 0.5	8	7,326	sw.	48	sw.	6	18	13	0	3.0	
Toledo.....	628	20	214	29.35	30.02 + 0.02	75.6 + 4.7	92	23	84	53	28	66	27	65	60	62	2.23 - 0.5	11	4,845	s.	27	sw.	19	15	11	5	4.1	
Detroit.....	730	213	245	29.21	30.01 - 0.03	74.6 + 4.7	96	20	84	55	28	67	26	63	60	67	2.98 + 0.2	9	6,601	n.	43	ne.	19	16	14	1	3.1	
<i>Upper Lake Region.</i>							69.5 + 3.2								73	2.66 - 0.3											4.3	
Alpena.....	693	13	92	29.34	30.00 - 0.03	67.2 + 3.1	98	20	78	44	27	56	31	62	59	76	1.61 - 1.7	9	7,069	se.	46	nw.	7	7	22	2	4.5	
Est. Manj....	612	54	60	29.32	29.93 - 0.01	60.2 + 1.7	98	20	76	42	27	57	26	61	57	75	2.13 - 1.5	10	6,224	s.	43	nw.	7	17	6	8	3.7	
Grand Haven.....	612	54	92	29.33	30.00 + 0.01	60.6 + 1.8	97	21	79	48	27	61	27	64	53	74	3.30 + 2.7	7	6,070	s.	34	w.	3	19	9	3	3.3	
Grand Rapids.....	707	70	87	29.26	30.01 + 0.01	72.8 + 2.8	97	21	83	48	27	62	30	63	61	71	3.40 + 0.4	9	4,914	sw.	34	w.	10	13	11	7	4.4	
Houghton.....	634	62	99	29.24	29.95 - 0.02	66.3 + 3.0	93	6	75	45	30	57	36	60	61	71	2.91 + 0.1	9	6,733	w.	40	s.	2	11	15	5	4.7	
Lansing.....	878	11	62	29.08	30.01 + 0.01	71.0 + 2.4	93	20	84	41	28	58	38	61	61	77	6.58 - 1.0	8	2,859	sw.	19	w.	3	16	10	5	3.9	
Ligonier.....	637	60	69	29.31	30.00 - 0.01	63.2 + 3.2	98	21	76	48	27	60	21	61	61	76	6.255	s.	43	w.	3	17	11	3	3.5			
Milwaukee.....	734	77	111	29.19	29.98 - 0.00	66.7 + 3.2	95	19	77	45	27	56	35	60	55	69	0.92 - 1.9	10	7,579	s.	38	s.	10	8	12	11	5.9	
Port Huron.....	638	70	120	29.33	30.00 - 0.01	71.6 + 3.4	96	20	84	49	24	61	31	61	61	72	1.93 - 0.7	11	6,522	sw.	30	n.	11	14	15	7	3.9	
Saginaw.....	611	48	82	29.32	30.00 - 0.01	71.9 -	100	10	73	34	28	59	35	61	60	71	1.11 - 1.6	9	5,111	s.	31	nw.	3	13	13	5	4.5	
Sault Ste. Marie.....	614	11	61	29.30	29.95 - 0.01	65.2 + 4.0	91	21	75	37	27	56	36	64	61	72	1.01 - 2.4	8	6,512	nw.	42	w.	7	10	14	7	5.4	
Green Bay.....	823	140	310	29.14	29.95 - 0.01	66.6 + 5.4	91	21	75	37	27	70	24	67	62	66	1.03 - 1.8	9	7,126	sw.	45	n.	2	14	10	7	5.2	
Milwaukee.....	617	109	144	29.32	29.97 - 0.02	71.4 + 4.4	96	18	81	46	27	61	30	63	62	72	1.29 - 1.7	7	6,826	sw.	42	ne.	3	15	13	3	3.5	
Duluth.....	1,133	11	47	28.70	29.96 - 0.01	63.1 + 0.2	90	6	75	43	26	55	32	59	55	75	3.37 - 0.2	13	8,761	w.	44	w.	31	10	17	4	4.8	
<i>North Dakota.</i>							66.2 - 0.5								70	2.49 + 0.2											4.0	
Moorhead.....	910	8	57	28.96	29.96 - 0.00	67.2 + 1.3	95	18	78	42	26	56	37	61	58	80	2.87 - 0.2	11	5,004	se.	21	sw.	21	15	13	3	2.6	
Bismarck.....</																												

TABLE I.—Climatological data for Weather Bureau Stations, August, 1916—Continued.

Districts and stations.	Elevation of instruments.		Pressure.				Temperature of the air.						Precipitation.				Wind.											
	Barometer above sea-level.		Thermometer above ground.		Anemometer above ground.		Station, reduced to mean of 24 hours.		Sea level, reduced to mean of 24 hours.		Departure from normal.		Mean maximum.		Mean minimum.		Mean wet thermometer.		Temperature of the dew point.		Total movement.		Miles per hour.		Maximum velocity.			
	Ft.	Ft.	Ft.	In.	In.	In.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	Miles.	Clear days.	Partly cloudy days.	Cloudy days.	Average cloudiness.	Total snowfall.		
<i>Northern Slope.</i>																												
Billings.....	3,140	5	.....	27.34	29.9	+0.03	66.4	.....	95	1	8	42	1	50	55	49	61	0.33	0.34	0.9	4,147	sw.	36	sw.	8	15		
Havre.....	2,505	11	44	25.33	29.9	+0.01	61.9	-2.0	90	8	79	36	1	51	45	55	61	1.19	0.5	0.5	5,999	sw.	31	n.	25	16		
Helena.....	4,110	87	114	26.9	29.9	+0.01	65.0	1.1	91	1	79	33	2	51	42	51	61	2.83	3.8	3.8	2,8	2,8	2,8	2,8	2,8	2,8		
Kalispell.....	2,96	11	34	26.9	29.9	+0.01	61.6	-1.3	85	31	76	47	1	52	48	52	51	2.1	0.6	0.6	21	sw.	21	sw.	9	5		
Miles City.....	2,371	26	48	27.46	29.96	+0.03	71.1	0.3	10	1	90	46	2	57	44	59	61	1.51	0.5	0.5	3,339	ne.	21	sw.	1	21		
Rapid City.....	3,259	50	58	26.64	29.99	+0.06	67.8	-1.0	95	8	84	41	2	56	56	56	61	2.36	0.2	0.2	4,985	n.	36	sw.	16	13		
Cheyenne.....	6,088	84	101	24.11	29.96	+0.04	63.8	2.0	86	2	76	41	2	52	53	47	63	1.16	0.2	0.2	7,095	n.v.	47	w.	9	11		
Lanier.....	5,37	60	65	24.71	29.97	+0.03	65.9	0.2	95	1	83	40	19	49	50	41	54	44	0.13	0.13	0.13	3,568	sw.	38	sw.	15	14	
Sheridan.....	3,790	10	47	26.13	29.97	.....	65.9	0.2	98	1	82	40	19	49	50	41	54	44	0.13	0.13	0.13	3,568	sw.	38	sw.	8	12	
Yellowstone Park.....	6,100	11	48	23.96	29.97	+0.01	58.0	-2.9	81	1	71	32	20	42	43	45	36	53	0.70	0.3	0.3	4,966	sw.	35	sw.	7	16	
North Platte.....	2,821	11	51	27.10	29.97	+0.03	74.0	-1.8	99	3	87	50	2	61	35	63	58	0.35	0.1	0.1	4,805	s.	30	s.	18	14		
<i>Middle Slope.</i>							77.1	+ 1.9										60	1.85	- 0.6						4.0		
Denver.....	5,29	106	113	24.81	29.97	+0.05	69.0	- 1.4	89	5	80	51	21	58	30	57	51	6	1.74	+ 0.4	12	4,985	s.	34	n.v.	26	14	
Pueblo.....	4,685	80	86	25.34	29.94	+0.03	71.9	- 0.2	95	2	85	50	28	59	35	59	63	3.12	+ 1.6	12	4,114	se.	29	ne.	21	11		
Concordia.....	1,39	50	58	25.98	29.98	0.00	78.7	-2.2	103	3	90	50	23	47	40	60	60	2.17	- 1.6	10	6,001	s.	22	s.	19	10		
Dodge.....	1,509	111	51	27.41	29.98	+0.07	75.6	-2.1	101	3	91	51	24	66	36	65	50	2.5	- 0.3	0.3	7,588	s.	39	se.	20	14		
Wichita.....	1,358	139	158	28.53	29.92	-0.03	81.0	+ 4.1	100	3	92	53	24	71	30	63	61	56	2.12	- 1.0	7	9,084	s.	36	sw.	10	18	
Altus.....	1,410	5	.....				81.7		104	2	98	58	28	71	36				0.58					23	2	6		
Muskogee.....	1,652	4	.....				85.0		105	13	98	56	24	72	43				1.81					24	2	5		
Oklahoma.....	1,214	10	47	28.71	29.96	+0.02	83.0	+ 4.5	102	13	95	56	24	71	33	69	63	60	0.68	- 2.5	5	8,844	s.	35	se.	5	19	
<i>Southern Slope.</i>							78.5	- 0.6										60	1.06	+ 0.0						4.0		
Abilene.....	1,738	10	53	28.17	29.98	+0.01	81.7	+ 0.5	98	13	93	55	24	70	33	67	69	55	0.59	- 1.4	3	7,311	s.	31	se.	19	14	
Amarillo.....	3,678	10	49	26.31	29.93	+0.04	76.6	- 2.0	97	13	89	55	28	64	28	63	57	6	0.89	+ 1.0	10	7,652	s.	39	sw.	20	19	
Del Rio.....	911	61	71	28.9	29.88	-0.02	81.6	- 2.4	94	18	90	67	25	73	24				2.64	+ 0.1	8	7,533	s.	60	se.	19	19	
Roswell.....	3,566	75	85	26.39	29.93	+0.05	74.0	- 2.0	93	14	85	58	29	63	28	63	57	64	9.56	+ 8.1	11	5,015	s.	29	n.	20	13	
<i>Southern Plateau.</i>							75.4	- 1.9										50	1.06	+ 0.0						3.4		
El Paso.....	3,76	110	133	26.18	29.85	+0.01	77.8	- 0.8	97	10	88	61	20	67	28	64	57	57	3.07	+ 1.4	10	7,407	se.	57	se.	13	12	
Santa Fe.....	7,013	57	66	23.36	29.89	0.00	66.8	- 0.2	84	10	77	49	28	56	27	55	49	82	1.67	- 0.7	14	4,608	e.	34	sw.	13	0	
Flagstaff.....	6,908	8	57	23.45	29.89	+0.05	60.7	- 2.1	90	11	74	38	21	48	30				3.29		13		30	w.	29	8	20	3
Phoenix.....	1,108	76	81	28.66	29.78	-0.01	87.0	- 2.0	103	7	109	62	21	73	36	69	60	47	0.30	- 0.7	5	3,879	e.	27	e.	14	23	
Yuma.....	141	9	54	20.60	29.73	-0.02	89.4	- 0.7	109	11	104	64	14	75	35	71	62	48	0.03	- 0.3	3	5,503	sw.	26	dw.	25	23	
Independence.....	3,910	11	42	25.94	29.84	+0.05	70.8	- 5.6	96	1	88	48	16	54	42	54	38	31	0.22	+ 0.1	3	4,280	se.	29	w.	17	26	
<i>Middle Plateau.</i>							68.9	- 2.7										40	0.90	+ 0.2						2.6		
Reno.....	4,532	71	81	25.46	29.88	+0.04	67.2	+ 0.2	91	1	85	38	19	49	45	47	33	38	0.04	- 0.2	1	4,800	w.	36	sw.	17	25	
Tonopah.....	6,099	12	20	24.10	29.90	.....	63.5	- 0.4	90	1	89	40	14	57	29	49	32	30	0.54	+ 0.2	2	6,457	se.	30	sc.	2	23	
Winnemucca.....	4,344	14	56	25.65	29.92	+0.04	60.1	- 4.4	92	2	86	46	24	51	49	51	31	33	0.11	- 0.1	0.1	3,907	ne.	27	sw.	7	24	
Modena.....	5,479	10	43	24.65	29.90	+0.04	63.8	- 2.8	98	23	81	43	19	50	40	51	39	49	1.97	+ 0.1	7	7,615	sw.	47	s.	17	19	
Salt Lake City.....	4,360	17	189	25.61	29.89	-0.02	72.9	- 2.6	96	1	84	51	24	62	31	56	43	40	0.60	- 0.2	3	6,179	se.	37	sc.	5	20	
Grand Junction.....	4,602	82	96	25.41	29.93	+0.03	72.4	- 3.7	92	1	84	54	31	61	32	57	47	47	2.16	+ 1.1	3	5,632	se.	35	sw.	9	14	
<i>Northern Plateau.</i>							69.7	- 0.7										43	0.76	+ 0.4						2.6		
Baker.....	3,471	48	51	26.45	30.01	+0.06	61.6	- 1.3	90	30	80	35	19	47	43	50	41	51	1.06	+ 0.7	6	4,531	se.	28	sw.	12	23	
Boise.....	2,739	73	86	27.11	29.91	-0.02	70.4	- 1.4	96	31	89	39	19	55	37	54	39	38	0.45	+ 0.3	3	4,342	rw.	31	w.	12	21	
Lewiston.....	757	40	48	29.14	29.93	-0.02	72.3	- 1.2	100	27	89	45	19	56	41	51	37	38	1.41	+ 1.0	6	1,849	e.	18	dw.	15	23	
Pocatello.....	4,477	60	68	25.49	29.90	-0.02	68.8	- 1.7	96	1	82	42	20	34	47	51	37	37	0.95	+ 0.4	6	5,880	se.	46	sw.	17	18	
Spokane.....	1,929	101	110	27.93	29.94	-0.01	69.0	+ 1.1	99	29	81	45	19	52	43	54	43	48	0.47	- 0.3	3	3,711	sw.	28	sw.	18	19	
Walla Walla.....	941	57	65	28.86	29.82	-0.04	74.0	+ 0.2	102	28	89	47	19	60	53	57	44	39	0.1	- 0.3	3	3,253	s.	18	sw.	12	23	
<i>North Pacific Coast Region.</i>																												

TABLE II.—Accumulated amounts of precipitation for each 5 minutes, for the principal storms in which the rate of fall equaled or exceeded 0.25 inch in any 5 minutes, or 0.80 in 1 hour, during August, 1916, at all stations furnished with self-registering gages.

Stations.	Date.	Total duration.		Total amount of precipitation.	Excessive rate.		Amount before excessive rate began.	Depths of precipitation (in inches) during periods of time indicated.													
		From—	To—		Began—	Ended—		5 min.	10 min.	15 min.	20 min.	25 min.	30 min.	35 min.	40 min.	45 min.	50 min.	60 min.	80 min.	100 min.	120 min.
Abilene, Tex.	19			0.39																	
Albany, N. Y.	27	3:42 p. m.	5:15 p. m.	0.91	3:53 p. m.	4:09 p. m.	0.02	0.25	0.47	0.67	0.70									0.38	
Alpena, Mich.	6	4:05 p. m.	5:18 p. m.	0.78	4:05 p. m.	5:18 p. m.	0.00	0.15	0.41	0.66											
Amarillo, Tex.	21-22	9:40 p. m.	1:44 a. m.	1.88	10:30 p. m.	11:13 p. m.	0.17	0.25	0.45	0.62	0.81	0.90	0.99	1.08	1.20	1.24					
Anniston, Ala.	12	6:30 p. m.	10:15 p. m.	1.15	6:32 p. m.	6:59 p. m.	0.01	0.19	0.40	0.66	0.79	0.89	0.94								
Asheville, N. C.	13	12:43 p. m.	5:10 p. m.	0.97	12:45 p. m.	1:17 p. m.	0.01	0.10	0.17	0.38	0.61	0.81	0.83	0.92							
Atlanta, Ga.	22	1:50 p. m.	3:45 p. m.	1.06	1:57 p. m.	4:18 p. m.	0.01	0.40	0.57	0.61											
Atlantic City, N. J.	14	(12:12 p. m.)	1:40 p. m.	0.48	12:43 p. m.	12:58 p. m.	0.03	0.10	0.25	0.40											
Augusta, Ga.	28			0.67																0.39	
Baker, Oreg.	17			0.73																0.20	0.31
Baltimore, Md.	27			0.33																0.21	0.15
Bentonville, Ark.	3	3:08 p. m.	4:20 p. m.	0.87	3:10 p. m.	3:48 p. m.	0.01	0.12	0.17	0.21	0.29	0.50	0.54	0.64	0.69						
Binghamton, N. Y.	15-16	9:05 p. m.	12:20 a. m.	1.12	9:08 p. m.	9:53 p. m.	0.01	0.08	0.17	0.28	0.37	0.40	0.49	0.66	0.80	0.89					
Birmingham, Ala.	26	6:15 p. m.	D. N. p. m.	0.80	6:58 p. m.	7:13 p. m.	0.20	0.16	0.30	0.35											
Bismarck, N. Dak.	2	3:00 p. m.	5:25 p. m.	1.25																0.21	0.15
Block Island, R. I.	23			0.27																0.16	0.18
Boise, Idaho.	17			0.41																0.64	0.28
Boston, Mass.	28			1.10																0.15	0.15
Buffalo, N. Y.	27			0.48																0.21	0.15
Burlington, Vt.	23			0.20																0.21	0.15
Cairo, Ill.	22	12:41 p. m.	1:13 p. m.	0.75	12:40 p. m.	1:06 p. m.	0.01	0.32	0.58	0.70	0.73										
Canton, N. Y.	8	8:03 a. m.	11:42 a. m.	0.43	9:24 a. m.	9:34 a. m.	0.05	0.26	0.34												
Charles City, Iowa.	3	10:27 a. m.	11:55 a. m.	0.61	10:48 a. m.	11:16 a. m.	0.02	0.15	0.22	0.24	0.27	0.44	0.52								
Charleston, S. C.	6	D. N. a. m.	D. N. a. m.	0.76	3:48 a. m.	4:06 a. m.	0.27	0.08	0.17	0.34	0.41										
Charlotte, N. C.	16	6:42 p. m.	S:10 p. m.	1.03	6:46 p. m.	7:31 p. m.	0.01	0.16	0.23	0.41	0.52	0.70	0.77	0.80	0.87	0.97					
Chattanooga, Tenn.	24	7:50 p. m.	S:20 p. m.	0.60	7:53 p. m.	S:13 p. m.	0.01	0.16	0.39	0.49	0.57									0.30	
Cheyenne, Wyo.	12			0.37																0.30	
Chicago, Ill.	10	2:50 p. m.	3:50 p. m.	0.64	3:07 p. m.	3:22 p. m.	0.03	0.16	0.41	0.58											
Cincinnati, Ohio.	8	8:38 a. m.	9:17 a. m.	0.47	8:42 a. m.	S:53 a. m.	0.02	0.17	0.39	0.43											
Cleveland, Ohio.	22	8:12 p. m.	S:37 p. m.	0.47	8:19 p. m.	S:30 p. m.	0.02	0.19	0.43	0.45											
Columbia, Mo.	25-26			0.45																0.37	
Columbia, S. C.	1-2	11:35 p. m.	D. N. a. m.	1.78	11:42 p. m.	12:48 a. m.	0.01	0.16	0.34	0.58	0.72	0.91	1.08	1.15	1.17	1.25	1.29	1.43	1.70		
Columbus, Ohio.	29	12:15 p. m.	3:30 p. m.	1.20	12:42 p. m.	1:08 p. m.	0.01	0.36	0.50	0.68	0.88	0.91	0.96								
Concord, N. H.	11	11:29 a. m.	11:56 a. m.	0.59	11:34 a. m.	11:45 a. m.	0.01	0.14	0.57	0.58											
Concordia, Kans.	23	3:07 p. m.	D. N. p. m.	2.15	7:06 p. m.	7:35 p. m.	0.91	0.08	0.31	0.70	0.82	0.89	0.95								
Corpus Christi, Tex.	29	6:39 a. m.	S:55 a. m.	2.41	6:30 a. m.	6:48 a. m.	0.00	0.14	0.21	0.31	0.52	0.76	0.99	1.14	1.28	1.46	1.65	1.95	2.14	0.48	
Davenport, Iowa.	10			0.87																0.58	
Dayton, Ohio.	5	2:43 p. m.	2:57 p. m.	0.28	2:45 p. m.	2:50 p. m.	0.01	0.26	0.27												
Del Rio, Tex.	27-28	9:25 p. m.	2:15 a. m.	0.52	9:21 p. m.	T.		0.17	0.27	0.37	0.42										
Denver, Colo.	12	5:20 p. m.	6:50 p. m.	0.49	6:05 p. m.	6:21 p. m.	0.00	0.12	0.24	0.36	0.42										
Des Moines, Iowa.	12	1:12 p. m.	4:17 p. m.	1.08	1:19 p. m.	2:17 p. m.	0.02	0.17	0.35	0.41	0.58	0.67	0.71								
Detroit, Mich.	7	7:07 p. m.	9:15 p. m.	1.26	7:21 p. m.	7:39 p. m.	0.02	0.12	0.37	0.72	0.91										
Devils Lake, N. Dak.	3	7:0 p. m.	8:30 p. m.	0.77	7:19 p. m.	8:03 p. m.	0.02	0.23	0.33	0.62	0.71										
Dodge City, Kans.	31	6:03 p. m.	7:45 p. m.	0.61	6:55 p. m.	7:05 p. m.	0.03	0.13	0.21	0.31											
Dubuque, Iowa.	10	5:05 p. m.	5:55 p. m.	0.85	5:15 p. m.	5:51 p. m.	0.15	0.32	0.33												
Durango, Colo.	21-22			1.93																0.50	
Eastport, Me.	8	D. N. a. m.	6:20 a. m.	0.46	2:36 a. m.	2:41 a. m.	0.01	0.31													
Elkins, W. Va.	5	D. N. a. m.	6:30 a. m.	0.91	5:53 a. m.	6:08 a. m.	0.34	0.15	0.42	0.52											
El Paso, Tex.	12	7:05 p. m.	7:10 p. m.	0.35	7:09 p. m.	7:19 p. m.	0.01	0.05	0.32												
Erie, Pa.	5	11:05 a. m.	12:15 p. m.	0.54	11:24 a. m.	11:54 a. m.	0.03	0.07	0.13	0.22	0.34	0.44	0.50								
Escanaba, Mich.	18	D. N. a. m.	6:30 a. m.	1.35	4:58 a. m.	5:43 a. m.	0.43	0.09	0.23	0.42	0.53	0.63	0.78	0.86	0.91						
Eureka, Cal.	17			0.10																0.09	
Evansville, Ind.	12	7:00 a. m.	11:10 a. m.	1.09	8:21 a. m.	8:47 a. m.	0.35	0.11	0.14	0.19	0.26	0.45	0.51								
Flagstaff, Ariz.	*																			*	
Fort Smith, Ark.																					
Fort Wayne, Ind.	3-4	10:30 p. m.	3:15 a. m.	0.80	2:26 a. m.	2:46 a. m.	0.20	0.12	0.30	0.42	0.56										
Fort Worth, Tex.	22	4:01 p. m.	7:25 p. m.	2.47	4:07 p. m.	4:50 p. m.	0.03	0.10†	0.97†	1.40†	1.71†	1.90†	2.09†	2.16†	2.21†					0.05	
Fresno, Cal.	28			0.07																	
Galveston, Tex.	5	7:10 a. m.	2:10 p. m.	1.56	11:45 a. m.	11:58 a. m.	0.96	0.24	0.46	0.52											
Grand Haven, Mich.	8	D. N. a. m.	8:15 a. m.	1.06	4:20 a. m.	4:56 a. m.	0.09	0.05	0.19	0.33	0.46	0.59	0.73	0.76							
Grand Haven, Mich.	13	10:10 a. m.	12:05 p. m.	0.82	10:43 a. m.	11:05 a. m.	0.01	0.19	0.35	0.55	0.63	0.66									
Grand Junction, Colo.	3	10:13 a. m.	1:38 p. m.	2.10	11:05 a. m.	2:19 p. m.	0.07	0.07	0.16	0.25	0.45	0.66	0.99	1.24						0.37	
Grand Rapids, Mich.	3	10:13 a. m.	1:38 p. m.	2.10	11:05 a. m.	2:19 p. m.	0.07	0.07	0.16	0.25	0.45	0.66	0.99	1.24							
Green Bay, Wis.	10	3:58 p. m.	7:10 p. m.	1.11	5:14 p. m.	8:44 p. m.	0.02	0.21	0.47	0.87	0.95									0.36	
Hannibal, Mo.	12-13	10:05 p. m.	9:18 a. m.	3.11	10:41 p. m.	11:37 p. m.	0.09	0.07	0.23	0.32	0.42	0.51	0.57	0.62	0.74	0.94	1.11	1.30			
Harrisburg, Pa.	28			0.82																0.42	
Hartford, Conn.	27	4:29 p. m.	7:05 p. m.	1.50	5:30 p. m.	6:47 p. m.	0.11	0.08	0.19	0.34	0.44	0.51									
Hatteras, N. C.	9	8:20 p. m.	9:00 p. m.	0.61	8:22 p. m.</td																

TABLE II.—Accumulated amounts of precipitation for each 5 minutes, for the principal storms in which the rate of fall equaled or exceeded 0.25 inch in any 5 minutes, or 0.80 in 1 hour, during August, 1916, at all stations furnished with self-registering gages—Continued.

Stations.	Date.	Total duration.		Total amount of precipitation.	Excessive rate.		Amount before excessive rate began.	Depths of precipitation (in inches) during periods of time indicated.														
		From—	To—		Began—	Ended—		5 min.	10 min.	15 min.	20 min.	25 min.	30 min.	35 min.	40 min.	45 min.	50 min.	60 min.	80 min.	100 min.	120 min.	
Kalispell, Mont.	9			1.06																0.35		
Kansas City, Mo.	13-14	10:48 p.m.	D. N. a.m.	1.73	11:49 p.m.	12:40 a.m.	0.29	0.13	0.26	0.34	0.42	0.49	0.52	0.58	0.71	0.85	0.89	0.93	0.93			
	7	5:25 p.m.	6:50 p.m.	1.12	6:05 p.m.	6:33 p.m.	0.12	0.18	0.38	0.60	0.77	0.93	0.97									
Keokuk, Iowa	10-11	10:10 p.m.	3:10 a.m.	0.90	11:56 p.m.	12:17 a.m.	0.16	0.08	0.14	0.33	0.57	1.01	1.09	1.13								
	11	4:53 p.m.	6:30 p.m.	1.26	4:55 p.m.	5:18 p.m.	0.00	0.59	0.91	1.01	1.09											
Key West, Fla.	8	7:25 a.m.	3:15 p.m.	1.53	10:23 a.m.	10:53 a.m.	0.10	0.19	0.35	0.52	0.64	0.84	1.08									
Knoxville, Tenn.	17	2:42 p.m.	3:15 p.m.	0.80	2:49 p.m.	3:11 p.m.	0.01	0.15	0.50	0.72	0.77	0.79										
	23	2:15 p.m.	5:15 p.m.	1.05	3:56 p.m.	4:21 p.m.	0.27	0.06	0.25	0.42	0.61	0.73										
La Crosse, Wis.	4	7:47 p.m.	D. N. p.m.	2.08	8:01 p.m.	8:36 p.m.	0.24	0.27	0.46	0.69	0.78	1.07	1.18	1.29								
				10:34 p.m.	11:02 p.m.	1.54	0.15	0.26	0.36	0.42	0.47	0.53										
Lander, Wyo.	5-6			0.14																0.12		
Lansing, Mich.	7			0.03																0.36		
Lewiston, Idaho	8-9			0.93																0.27		
Lexington, Ky.	15			1.44																0.50		
Lincoln, Nebr.	31-1	11:50 p.m.	6:28 a.m.	1.81	12:47 a.m.	1:02 a.m.	0.13	0.20	0.48	0.60										T.		
	3	1:00 a.m.	4:50 a.m.	0.67	3:22 a.m.	3:34 a.m.	0.07	0.27	0.46	0.54												
Little Rock, Ark.	23	6:10 p.m.	10:15 p.m.	0.72	6:25 p.m.	6:56 p.m.	0.01	0.10	0.26	0.34	0.41	0.52	0.57	0.60								
Los Angeles, Cal.	24			1.48	2:50 p.m.	1:55 p.m.	0.01	0.16	0.34	0.56	0.73	0.82										
Louisville, Ky.	15	D. N. a.m.	6:15 a.m.	1.25	3:40 a.m.	4:40 a.m.	0.09	0.09	0.11	0.20	0.31	0.42	0.48	0.56	0.68	0.73	0.80	1.09				
Ludington, Mich.	7	5:31 p.m.	6:05 p.m.	0.53	5:32 p.m.	5:54 p.m.	T.	0.19	0.22	0.27	0.45	0.50										
Lynchburg, Va.	24	5:05 a.m.	7:35 a.m.	0.52	5:44 a.m.	5:54 a.m.	0.03	0.17	0.46													
Macon, Ga.	4	5:29 p.m.	6:22 p.m.	0.70	5:32 p.m.	5:52 p.m.	0.01	0.21	0.40	0.53	0.60											
Madison, Wis.	4-5	11:03 a.m.	11:22 p.m.	0.51	11:05 a.m.	11:19 a.m.	0.01	0.20	0.43	0.50												
Marquette, Mich.	7	9:20 p.m.	D. N. a.m.	2.01	10:38 p.m.	11:44 p.m.	0.70	0.10	0.28	0.49	0.62	0.74	0.85	0.89	0.91	0.91	0.94	1.17	1.31	0.28		
Memphis, Tenn.	9	7:45 p.m.	8:55 p.m.	0.39	8:15 p.m.	8:15 p.m.	0.00	0.13	0.38	0.61	0.83	0.96	1.04									
Meridian, Miss.	13	2:17 p.m.	7:30 p.m.	0.74	2:51 p.m.	3:22 p.m.	0.02	0.10	0.21	0.38	0.53	0.61	0.64									
Miami, Fla.	25	12:35 p.m.	9:25 p.m.	6.01	12:49 p.m.		(0.08)	0.18	0.28	0.47	0.71	0.82	1.00	1.24	1.41	1.63						
Milwaukee, Wis.	3	12:55 p.m.	4:30 p.m.	1.86	1:47 p.m.	3:35 p.m.	0.07	0.19	0.29	0.35	0.39	0.61	0.68	0.70	0.73	0.74	0.88	1.06	1.63			
	8:15 a.m.	10:50 a.m.	0.81	8:15 a.m.	8:41 a.m.	0.00	0.16	0.20	0.39	0.52	0.60	0.68										
Minneapolis, Minn.	10	3:05 p.m.	5:15 p.m.	0.77	3:15 p.m.	3:28 p.m.	0.01	0.24	0.52	0.58										0.36		
Mobile, Ala.	4	11:56 a.m.	5:12 p.m.	1.40	3:14 p.m.	3:45 p.m.	0.68	0.13	0.30	0.46	0.54	0.61	0.68	0.71								
Modena, Utah	29	4:52 p.m.	5:30 p.m.	0.39	4:56 p.m.	5:05 p.m.	0.01	0.24	0.36													
Montgomery, Ala.	2-3	9:50 p.m.	D. N. a.m.	0.96	10:57 p.m.	11:28 p.m.	0.01	0.07	0.28	0.44	0.58	0.76	0.82	0.85								
Moorhead, Minn.	6	3:55 p.m.	4:18 p.m.	0.63	3:57 p.m.	4:07 p.m.	0.01	0.35	0.60											0.33		
Mount Tamalpais, Cal.	28			0.66																0.10		
Nantucket, Mass.	29			0.15																0.29		
Nashville, Tenn.	1	2:43 p.m.	8:45 p.m.	2.58	2:48 p.m.	3:12 p.m.	0.01	0.17	0.30	0.66	0.83	0.96										
New Haven, Conn.	10	4:20 p.m.	5:08 p.m.	0.85	4:43 p.m.	4:56 p.m.	0.02	0.28	0.65	0.82												
New Orleans, La.	4	9:47 a.m.	2:20 p.m.	0.98	10:08 a.m.	10:32 a.m.	0.01	0.11	0.33	0.42	0.48	0.54									0.31	
New York, N. Y.	8			0.32																		
Norfolk, Va.	5			0.64																0.51		
Northfield, Vt.	8-10			0.89																0.33		
North Head, Wash.	1			0.05																0.03		
North Platte, Nebr.	29			0.59																0.34		
Oklahoma, Okla.	27			0.36																0.17		
Omaha, Nebr.	1	2:20 a.m.	2:15 p.m.	1.00	2:27 a.m.	2:52 a.m.	0.01	0.12	0.21	0.33	0.43	0.52										
Oswego, N. Y.	23			0.19																0.19		
Palestine, Tex.	5			0.53																0.46		
Parkersburg, W. Va.	11			0.55																0.44		
Pensacola, Fla.	8	4:50 p.m.	9:55 p.m.	1.57	5:15 p.m.	6:07 p.m.	0.02	0.13	0.28	0.36	0.46	0.52	0.60	0.66	0.84	1.04	1.19	1.27				
	8:15 p.m.	1:50 p.m.	0.65	8:41 p.m.	9:30 p.m.	0.01	0.08	0.23	0.33	0.49	0.55											
Peoria, Ill.	7	2:22 p.m.	3:55 p.m.	0.85	2:32 p.m.	3:01 p.m.	0.05	0.20	0.38	0.49	0.63	0.69	0.75									
	10-11	10:08 p.m.	4:00 a.m.	3.68	10:15 p.m.	11:16 p.m.	0.01	0.13	0.41	0.73	0.94	1.03	1.15									
Philadelphia, Pa.	11-12			0.39																0.25		
Phoenix, Ariz.	12			0.12																0.10		
Pierre, S. Dak.	20-21			3.77																0.69		
Pittsburgh, Pa.	5	3:05 p.m.	5:40 p.m.	1.81	3:11 p.m.	4:16 p.m.	0.01	0.06	0.26	0.44	0.45	0.45	0.45	0.45	0.57	0.71	0.94	1.52	1.67			
	8	1:12 p.m.	4:45 p.m.	0.76	1:15 p.m.	1:32 p.m.	0.02	0.18	0.32	0.52	0.58											
Pocatello, Idaho	15	2:48 p.m.	4:10 p.m.	0.74	3:30 p.m.	3:49 p.m.	0.08	0.07	0.21	0.48	0.61											
Point Reyes Light, Cal.	13			0.03																0.01		
Port Huron, Mich.	7	5:35 p.m.	8:30 p.m.	1.34	5:42 p.m.	6:40 p.m.	0.01	0.16	0.28	0.40	0.45	0.45	0.45	0.45	0.57	0.58	0.70	1.08				
Portland, Me.	23	5:07 p.m.	5:48 p.m.	0.65	5:21 p.m.	5:35 p.m.	0.01	0.24	0.55	0.63												
Portland, Oreg.	17			0.10																0.08		
Providence, R. I.	27			0.23																0.21		
Pueblo, Colo.	20			1.39																0.58		
Raleigh, N. C.	23-24	10:02 p.m.	D. N. a.m.	2.61	10:12 p.m.	10:44 p.m.	0.01	0.37	0.76	1.22	1.41	1.62	1.74	1.81								
	28	3:57 p.m.	4:17 p.m.	1.05	3:57 p.m.	4:15 p.m.	0.00	0.26	0.70	0.96	1.05											
Rapid City, S. Dak.	16	4:22 p.m.	5:35 p.m.	1.00	4:48 p.m.	5:12 p.m.	0.02	0.15	0.46	0.70	0.85	0.98										
Reading, Pa.	28	8:09 a.m.	8:27 a.m.	0.44	8:09 a.m.	8:16 a.m.	0.00	0.38	0.44													
Red Bluff, Cal.	14			T.																*		
Reno, Nev.	28																					

TABLE II.—Accumulated amounts of precipitation for each 5 minutes, for the principal storms in which the rate of fall equaled or exceeded 0.25 inch in any 5 minutes, or 0.80 in 1 hour, during August, 1916, at all stations furnished with self-registering gages—Continued.

Stations.	Date.	Total duration.		Total amount of precipitation.	Excessive rate.		Amount before excessive rate began.	Depths of precipitation (in inches) during periods of time indicated														
		From—	To—		Began—	Ended—		5 min.	10 min.	15 min.	20 min.	25 min.	30 min.	35 min.	40 min.	45 min.	50 min.	60 min.	80 min.	100 min.	120 min.	
Salt Lake City, Utah.	5			0.24																		
San Antonio, Tex.	29	4:16 p. m.	6:25 p. m.	2.28	4:20 p. m.	4:57 p. m.	0.02	0.21	0.78	1.31	1.63	1.88	2.10	2.18	2.22			0.21				
San Diego, Cal.	24			0.01															0.01			
Sand Key, Fla.	2	7:35 a. m.	2:45 p. m.	0.84	8:07 a. m.	8:41 a. m.	0.10	0.06	0.21	0.32	0.39	0.44	0.60	0.69								
Sandusky, Ohio	11	D. N. a. m.	D. N. a. m.	0.81	2:20 a. m.	2:47 a. m.	0.06	0.06	0.08	0.10	0.27	0.48	0.52									
San Francisco, Cal.	13-14			0.22															0.12			
San Jose, Cal.	26			0.01														0.01				
San Luis Obispo, Cal.	27			T.														T.				
Santa Fe, N. Mex.	15	7:30 p. m.	8:35 p. m.	0.47	7:35 p. m.	7:56 p. m.	0.01	0.17	0.30	0.35	0.41	0.43										
Sault Ste. Marie, Mich.	7	6:35 a. m.	9:00 a. m.	1.07	6:42 a. m.	6:55 p. m.	0.01	0.61	0.85	0.92												
Savannah, Ga.	24	4:13 p. m.	5:26 p. m.	1.84	4:18 p. m.	5:18 p. m.	0.01	0.19	0.50	0.57	0.58	0.70	0.89	1.05	1.13	1.27	1.39	1.81				
Scranton, Pa.	28	2:54 p. m.	6:30 p. m.	1.95	3:33 p. m.	4:37 p. m.	0.01	0.08	0.12	0.32	0.62	0.79	1.00	1.09	1.25	1.40	1.54	1.76	1.88			
Seattle, Wash.	18			0.10														0.08				
Sheridan, Wyo.	8			0.06														0.04				
Shreveport, La.	23			0.05														0.05				
Sioux City, Iowa	6-7	9:00 p. m.	D. N. a. m.	1.17	9:10 p. m.	9:30 p. m.	0.05	0.23	0.54	0.76	0.84								0.16			
Spokane, Wash.	8	12:30 p. m.	D. N. a. m.	0.58	10:20 p. m.	10:47 p. m.	0.03	0.10	0.26	0.35	0.41								0.14			
Springfield, Ill.	3	3:40 p. m.	6:35 p. m.	0.55	3:40 p. m.	4:00 p. m.	0.01	0.24	0.49													
Springfield, Mo.	7	5:45 p. m.	D. N. p. m.	0.92	5:50 p. m.	6:26 p. m.	0.01	0.11	0.20	0.21	0.28	0.48	0.62	0.71	0.72							
Syracuse, N. Y.	8	3:17 p. m.	5:40 p. m.	1.85	3:44 p. m.	4:31 p. m.	0.01	0.16	0.23	0.43	0.57	0.73	0.90	1.08	1.43	1.70	1.78					
Tacoma, Wash.	17	12:25 p. m.	1:45 p. m.	1.11	12:31 p. m.	1:30 p. m.	0.01	0.15	0.35	0.63	0.64	0.64	0.65	0.74	0.80	0.82	0.90	1.03				
Tampa, Fla.	4	4:55 p. m.	8:15 p. m.	1.67	5:02 p. m.	6:19 p. m.	0.01	0.16	0.39	0.52	0.65	0.73	0.87	1.00	1.10			0.55				
Tatoosh Island, Wash.	6	2:20 p. m.	4:45 p. m.	1.64	2:39 p. m.	3:39 p. m.	0.02	0.19	0.43	0.52	0.56	0.58	0.63	0.73	0.84	0.98	1.24	1.30				
Taylor, Tex.	23	5:25 p. m.	6:40 p. m.	0.85	5:59 p. m.	6:19 p. m.	0.02	0.18	0.57	0.71	0.79								0.05			
Terre Haute, Ind.	14-15	7:05 p. m.	8:20 a. m.	1.54	4:48 a. m.	5:05 a. m.	0.78	0.10	0.26	0.36	0.42											
Thomasville, Ga.	6	9:45 a. m.	11:30 a. m.	0.60	9:52 a. m.	10:10 a. m.	0.01	0.16	0.31	0.40												
Toledo, Ohio.	8	12:03 a. m.	12:11 a. m.	0.55	1:15 a. m.	12:34 a. m.	0.03	0.12	0.24	0.36	0.43	0.49										
Tonopah, Nev.	27			0.39														0.14				
Topeka, Kans.	14			0.19														0.16				
Valentine, Nebr.	20-21	3:55 p. m.	D. N. a. m.	3.33	4:19 p. m.	4:30 p. m.	0.03	0.12	0.44	0.59	0.64											
Vicksburg, Miss.	8	5:20 p. m.	9:20 p. m.	2.13	6:31 p. m.	7:30 p. m.	0.02	0.17	0.23	0.30	0.51	0.86	1.12	1.19	1.27	1.33	1.40		0.08			
Walla Walla, Wash.	17			0.12														1.13*	*1.46			
Washington, D. C.	27	1:20 p. m.	3:10 p. m.	1.46	4:29 p. m.	4:38 p. m.	0.01	0.13	0.38													
Wichita, Kans.	16	4:28 p. m.	5:30 p. m.	0.42	4:29 p. m.	4:38 p. m.	0.01	0.13														
Williston, N. Dak.	1	8:55 p. m.	9:27 p. m.	0.38	9:08 p. m.	9:18 p. m.	0.01	0.27	0.37									0.51				
Wilmington, N. C.	24	2:10 p. m.	3:04 p. m.	0.51	2:52 p. m.	3:04 p. m.	0.05	0.19	0.45									0.04				
Winnemucca, Nev.	17			0.05																		
Wytheville, Va.	6	6:41 p. m.	8:25 p. m.	2.62	6:45 p. m.	7:48 p. m.	0.02	0.08	0.18	0.22	0.25	0.32	0.57	0.95	1.23	1.51	1.83	2.43	2.59			
Yankton, S. Dak.	6-7	1:10 p. m.	12:10 a. m.	0.61	11:15 p. m.	11:35 p. m.	0.01	0.10	0.22	0.44	0.58							0.18				
Yellowstone Park, Wyo.	7-8			0.46																		

\* Self-register not working.

† Record partly estimated.

‡ No precipitation occurred during month.

TABLE III.—*Data furnished by the Canadian Meteorological Service, August, 1916.*

Stations.	Altitude above M. S. L.* Jan. 1, 1916.	Pressure.			Temperature of the air.					Precipitation.		
		Station, reduced to mean of 24 hours.	Sealevel, reduced to mean of 24 hours.	Depart- ture from normal.	Mean max. + mean min. + 2.	Depart- ture from normal.	Mean maxi- mum.	Mean mini- mum.	Highest.	Total.	Depart- ture from normal.	Total snowfall.
		Feet.	Inches.	Inches.	°F.	°F.	°F.	°F.	°F.	Inches.	Inches.	Inches.
St. Johns, N. F.....	125	29.67	29.80	-0.16	50.2	-0.6	67.8	50.6	80	42	2.25	-1.83
Sydney, C. B. I.....	48	29.90	29.94	- .01	65.3	+2.0	76.3	54.4	88	45	3.42	-0.20
Halifax, N. S.....	88	29.86	29.96	.09	65.5	+1.9	76.2	54.9	89	44	1.31	-3.04
Yarmouth, N. S.....	65	29.89	29.96	- .01	60.6	+0.4	68.2	53.1	79	42	1.42	-2.59
Charlottetown, P. E. I.....	38	29.88	29.92	- .02	66.3	+2.0	74.2	58.3	82	47	1.64	-2.10
Chatham, N. B.....	28	29.89	29.91	- .02	67.5	+4.3	78.3	56.8	94	43	2.83	-1.19
Father Point, Que.....	20	29.86	29.88	- .03	57.3	+1.7	63.7	48.9	77	44	2.18	-0.87
Quebec, Que.....	266	29.62	29.94	+ .01	66.6	+3.5	75.9	57.4	89	47	1.96	-1.87
Montreal, Que.....	187	29.73	29.93	+ .02	70.2	+3.8	79.3	61.2	92	54	1.46	-2.11
Stonecliffe, Ont.....	489	29.34	29.84	- .03	67.2	+4.0	80.4	54.1	96	42	2.75	-0.20
Ottawa, Ont.....	236	29.68	29.82	- .02	60.3	+4.5	80.2	58.3	94	46	1.81	-1.22
Kingston, Ont.....	285	29.66	29.96	- .02	68.6	+1.6	76.9	60.3	88	47	2.67	+0.29
Toronto, Ont.....	379	29.58	29.97	- .03	71.9	+5.0	83.9	60.0	98	46	1.56	-1.20
White River, Ont.....	1,244	28.02	29.91	- .05	58.9	+2.5	73.7	44.2	90	24	2.97	-0.33
Port Stanley, Ont.....	502	29.38	30.01	+ .01	69.3	+3.4	79.5	53.2	89	47	5.86	-3.44
Southampton, Ont.....	656	29.30	29.85	- .05	68.5	+4.7	77.2	50.0	91	46	1.76	-0.49
Parry Sound, Ont.....	688	29.29	29.97	- .01	60.6	+6.1	81.9	57.3	98	45	2.00	-0.72
Port Arthur, Ont.....	644	29.24	29.95	- .01	63.0	+3.5	73.0	53.0	84	39	5.54	+2.79
Winnipeg, Man.....	760	29.09	29.91	- .03	64.8	+1.4	76.3	53.4	93	38	2.35	-0.32
Minnedosa, Man.....	1,030	28.13	29.92	- .02	60.7	+1.3	73.8	47.7	91	34	1.18	+0.08
Qu'Appelle, Sask.....	2,115	27.68	29.88	- .05	60.8	-0.7	74.6	47.0	89	33	2.94	+1.35
Medicine Hat, Alberta.....	2,144	27.64	29.83	- .04	65.2	-0.5	79.7	50.8	90	38	1.69	+0.02
Swift Current, Sask.....	2,302	27.36	29.89	- .04	60.6	-3.4	75.1	46.1	88	32	2.54	+0.63
Calgary, Alberta.....	3,428	26.45	29.93	+ .03	60.5	+1.1	73.7	47.2	85	39	2.03	-0.11
Banff, Alberta.....	4,521	25.42	29.03	+ .02	55.4	-0.9	70.1	40.7	80	33	3.30	-0.77
Edmonton, Alberta.....	2,150	27.64	29.88	- .05	58.1	-0.7	70.0	46.2	81	32	3.70	+1.57
Prince Albert, Sask.....	1,450	28.34	29.87	- .05	60.2	+1.3	73.0	47.4	85	30	1.63	-0.40
Battleford, Sask.....	1,592	28.18	29.90	- .01	60.3	-2.3	72.5	48.1	84	34	4.70	+2.34
Kamloops, B. C.....	1,262	28.71	29.97	+ .06	68.2	-0.4	83.2	53.2	94	45	0.39	-0.70
Victoria, B. C.....	230	29.76	30.01	.00	59.1	+0.4	67.2	51.1	86	48	T.	-0.60
Barkerville, B. C.....	4,180	25.77	30.07	+ .17	52.3	+4.0	65.0	39.6	76	30	0.56	-2.34
Hamilton, Bermuda.....	151	29.94	30.10	.00	78.1	-1.5	83.1	73.1	85	69	5.42	-0.06

\* The altitudes given were furnished by the Director, Canadian Meteorological Service, Mar. 9, 1916, and refer to eisterns of barometers at the respective stations. Where sea-level pressures and departures are italicized new reduction factors are in course of computation.—C. A., Jr.